

JANUARY
1954

THERE'S A PHILIPS VALVE FOR EVERY SOCKET

Amateur Radio

JOURNAL OF
THE WIRELESS
INSTITUTE OF
AUSTRALIA

For the Experimenter
and Radio Enthusiast



1/-

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SPECIAL VALVES

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Pentode Amplifier with low hum and anti-microphonic construction.

Heater: 6.3v. at 0.2a.
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Stage gain as resistance-coupled Amplifier: 175.

Base: Octal.



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3A4	10/-	7N7	10/-
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2716 Kc.	7020 Kc.	7125 Kc.	8488 Kc.
3482.5 Kc.	7021 Kc.	7126 Kc.	8500 Kc.
3503 Kc.	7022 Kc.	7130 Kc.	9125 Kc.
3509 Kc.	7023 Kc.	7134 Kc.	10 Mc.
3511 Kc.	7031 Kc.	7145 Kc.	10.511 Mc.
3512 Kc.	7032 Kc.	7156 Kc.	10.524 Mc.
3515 Kc.	7032.6 Kc.	7163 Kc.	10.530 Mc.
3516 Kc.	7048 Kc.	7174 Kc.	10.536 Mc.
3528 Kc.	7052 Kc.	7179 Kc.	10.544 Mc.
3532 Kc.	7062 Kc.	7202.3 Kc.	10.546 Mc.
3539.3 Kc.	7063 Kc.	8000 Kc.	10.563 Mc.
3634 Kc.	7064 Kc.	8017.5 Kc.	11 Mc.
3640 Kc.	7068 Kc.	8027 Kc.	12.893 Mc.
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4600 Kc.	7090 Kc.	8155.71 Kc.	14.325 Mc.
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WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK3WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST, 50 and 144 Mc. No frequency checks available from VK3WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 51.015 and 146.25 Mc. Intrastate working frequency 7125 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 3560 and 14342 Kc. 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK3WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK3MD and VK3WI by arrangements only on the 7 and 14 Mc. bands.

VK4WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK3WI: Sundays, at 1000 hours EST, on 7146 Kc. and 146.5 Mc. No frequency checks are available.

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EDITORIAL



LOOKING FORWARD

With the dawn of the new year, Federal Executive dons battledress once more and sallies forth to do battle for the advancement of the Amateur cause, with full implementation of 1953's promises and TV for Hams as the first two planks in a large platform.

This year we will be honoured by a visit from our gracious Queen Elizabeth II. Who can predict what special service the Amateur fraternity may possibly be called upon to perform for Her Majesty; however, of one thing we are perfectly sure, every Amateur will be ready and willing to serve, will acquit himself well if called upon and will fulfil in every way the requirements laid down in the Amateurs' Code.

If the changed date of the National Field Day achieves its purpose, we

should be able to record a bumper harvest of logs.

Divisional membership in general should show a marked increase with the admittance of Limited A.O.C.P. holders. No doubt our astute membership committees will conduct a vigorous campaign.

Amongst the most important events for 1954 will be the publication by the W.I.A. of the first edition of "The Australian Amateur Call Book," a completely up-to-date volume which will take pride of place in every Ham shack.

The magazine "Amateur Radio," too, will show marked improvement before the year is out.

With your co-operation all this adds up to a **Happy and Prosperous New Year** for the Institute and its members.

FEDERAL EXECUTIVE.

THE CONTENTS

Simple Converter for Two Metres	3	DX Countries of the World	12
Modifying the Bendix RA-10-FA Receiver	4	50 Megacycles and Above	13
Countryman's Double Conversion Receiver	9	VK7WI to Operate at Science Exhibition	13
Hints and Kinks	9	DX Activity by VK3AHH	15
Accurate Frequency Transmission Results	9	Prediction Chart for January	15
National Field Day, 1954	10	Cancellation of Zone 29 Award	15
		Federal, QSL, and Divisional Notes	16

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AT5/AR8 TRANSMITTING AND RECEIVING EQUIPMENT



AT5 TRANSMITTER

A high powered unit using two 807s in final. Covering 140 Kc. to 20 Mc., with provision for six crystals and a V.F.O.

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CONVERTED RECEIVER

To operate direct from 220-250 volt A.C. Output stage also altered to improve tone and reception. Complete with loud speaker in leatherette case.

Price £34/17/6



AR8 RECEIVER

11 valve twin channel Receiver, using standard 6.3v. octal valves; six bands. Complete coverage 140 Kc. to 20 Mc.

£23/17/6



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- Type BC453, 190 to 550 Kc.,
£12/10/-.
BC454, 3 to 6 Mc.,
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BC455, 6 to 9.1 Mc.,
£7/10/-.

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VALVES

BRAND NEW IN ORIGINAL CARTONS

1H6	7/6	513	60/-
1K7	10/6	VR150/30	22/6
6AC7	15/-	954	7/11
6B8	15/-	955	7/11
6F6	12/6	12A6	12/6
2051	22/6	2050, 22/6. This valve is	
6K6G	12/6	suitable for use with Photo	
6L7	12/6	Cell Relay Unit, as per June,	
807	25/-	1953, issue of "Radio and	
830B	60/-	Hobbies."	

RADIO TRANSCEIVER AND INDICATOR UNIT

V.H.F. Approximately 180 Mc.

Type 1045. Valve line-up in Transceiver: 2—RL18, 1—VR135, 1—5V4, 1—EA50, 1—RL37, 6—EF50, 1—6SN7, 1—GL2050 (Thyatron), 2—VR150/30 (Voltage Regulators), 1—884 (Gas Triode). This unit also contains a motor driven Selector Switch, two superbly designed Polystyrene six-position rotary Coil Turrets, and an I.F. Transformer strip ideally suitable for use with Television. Band width 10 Mc. Indicator Unit, Type 1047. Valve line-up: 7—EF50, 1—879, 1—VR54. Also contains a 3,000 type Relay 2,000 ohms, ten assorted Potentiometers, a two-bank Ceramic Wafer Switch, and an illuminated scale (5BP1 tube and shield not included). These two Units are brand new, and are packed together in their original packing cases.

PRICE £21/10/- the two.

Transceiver £15/-/- } if supplied separately.
Indicator Unit £7/10/- }

ASD RECEIVERS TYPE CPM-46A-BG

V.H.F. RECEIVERS, approx. 300 Megs.

Containing the following Valves:

9—6AC7	2—6V6G	1—6SJ7
1—6H6	1—6SN7G	2—6X5GT
2—2050	2—VR105/30	2—5U4G
1—6A4G	1—VR150/30	2—2A3

Price £17/10/-

TRANSMITTER-RECEIVER Type RT-34/APS-13

Frequency Modulated, approx. 450 Mc. Valve line-up:
9—6AG5
5—6J6
2—2D21
1—VR105

Also contains Dynamotor, input 27v. 1.5 amp., output 285v. 60 Ma. Price £17/10/-

GENEMOTORS

Type 72—Input: 27v. 3.6a., Output: 250v. 70 Ma., and 12.6v. 2.6 a., £1/19/6.

Type DA-3A—Input: 28v. 10.5a., Output: 300v. 260 Ma., 150v. 10 Ma., 14.5v. 5a., £1/9/6.

Type 31—Input: 18v. 12a., Output: 7.2v. 13a., 225v. 110 Ma., £1/19/6.

TRANSMITTING TUNING UNITS by G.E.

Type TU10B
10000 to 12500 Kc., £2/10/-
Type TU7B
4500 to 6200 Kc., £2/10/-
Type TU6B
3000 to 4500 Kc., £3/10/-
Type TU9B
7700 to 10000 Kc., £2/10/-

BENDIX RADIO AZIMUTH CIRCLE LOOP AERIAL CONTROLS, Type MN22A

Price 35/-
Post. & Pack: 4/9. Interstate 6/-.

Simple Converter for Two Metres

BY F. G. BAIL,* VK3YS

WITH the introduction of the Limited Class A.O.C.P., there are no doubt many who will be endeavouring to get together suitable gear for v.h.f. operation. Here is a simple converter which will help to provide a necessary part of the equipment—the receiver.

If you have a reasonably good s.w. or d.w. receiver, then you have the basis for a v.h.f. receiver. The 274N Command series of disposals receivers (e.g. the BC455) are excellent, requiring little modification to get them into the 100-130 MHz. s.w. or d.w. range. Power supply, are well shielded, and in addition have a b.f.o. already built in for c.w., an advantage when locating a weak signal. The converter to be described uses standard circuitry, and parts which are readily available. When completed, it provides ease of tuning with a single dial control, and is simple to construct.

A 636 tin mixer valve combines the function of mixer and oscillator. An aluminum chassis, 8" x 5" x 2½", was selected as it has sufficient space for the addition of an r.f. stage at a later date. The choice of the main components is of some importance. The oscillator tuning is done by a 1000 p.f. variable capacitor and a 1000 p.f. split-stator type cut down to one rotor and one stator plate per section. A smooth, positive action vernier control should be used, one possibility being a dial mechanism from the p.a. section of the BC375 or BC191 "TU" coil units. These dials have a flexible coupling attached, suitable for a 1" shaft. A hot soldering iron applied to the shaft coupling screws will soften the blue "locking" adhesive sufficiently to allow their removal with a hexagon key wrench or the "tang" of a small file. The circular "stop" plate can be trimmed down with a jeweller's saw blade in a fretsaw frame, or (with care), by use of a pair of good quality tin snips.

The tuning condenser, with the oscillator coil soldered across the end, is fixed to a bracket underneath the chassis at one end (shaft at right angles to the short dimension of the chassis), with the valve socket about 3" to the rear of the condenser. If the dial is mounted first, then the bracket size can be made to suit the final position of the dial coupling.

The valve plugs in above the chassis. This arrangement minimises the possibility of drift due to heat radiation from the valve affecting the oscillator components. The 3-12 pF. ceramic trimmer, C2, is soldered directly across the stator sections of C3 and is accessible for adjustment through a hole drilled in the top of the chassis.

The triode section of the 6J6 to which the "getter" support is attached to the anode, should be used for the mixer section rather than for the oscillator. In order to reduce the possibility of microphonic effects. This is pin No. 2 with valves of U.S.A. origin, but is sometimes pin No. 1 with valves of English manufacture. Check this when you obtain your 6J6. The "getter" support is visible through the envelope.

Mount the filament by-pass right at the valve socket onto the centre shield of the socket, this being wired to earth. Failure to do this originally, resulted in "joey's" throughout the band.

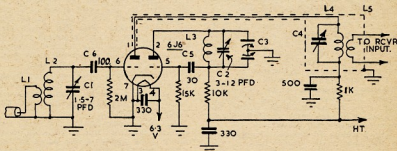
The antenna coupling coil, L1, which is anchored to a resistor strip, is tightly coupled to the mixer coil. It may be necessary to experiment with the number of turns on L1 for different forms of antenna feed.

The frequency of the converter i.f. output is not critical; 7.4 Mc. was chosen as it was desired to keep it the same as that used in the station 2 metre receiver. It can be higher if desired.

10 Ma. A quick check can be made for operation of the oscillator stage with a loop and a 40 Ma. globe. The glow from the globe will be plainly visible if the stage is oscillating.

With the output of the i.f. coil coupled by means of a shielded wire to the input terminals of the main receiver, which is tuned to the converter i.f., noticeable increase in hiss level should be heard when the converter is switched on. Adjust C4 for maximum hiss level. Don't forget to run the shielding of the coupling lead right up to the main receiver antenna terminal, keeping the lead from the receiver earth terminal to the braid as short as possible, and enclose the i.f. coil in a small can, to reduce pick-up on the i.f. frequency. It is a good idea to by-pass all power leads at the point of entry into the chassis, and even to shield these leads to ensure minimum extraneous pick-up.

If a grid dip oscillator is available, the job of lining up will be **very much** simplified, but with care and patience it should be possible to get very close to the desired adjustments. If you know



All resistors half watt carbon.
By-pass condensers midget mica or preferably HI-K midget ceramics.
C5 and C6—N.P.O. ceramicons.
Trimners C1 and C2 ceramicon type, 1.5-7 pF. and 3-12 pF. respectively.
C3—See text.

Coll Data.—

- L1—1 turn interwound between 1st and 2nd turns of L2. 20 s.w.g. insulated wire.
- L2—3 turns $\frac{1}{8}$ " diam. $\frac{1}{2}$ " long. 20 s.w.g. wire.
- L3—4 turns $\frac{3}{8}$ " diam. $\frac{1}{4}$ " long. 20 s.w.g. wire.
- L4—26 turns close wound on $\frac{3}{8}$ " diam. former. 26 s.w.g. d.c.c. wire.
- L5—8 turns at bottom of L4. 26 s.w.g. d.c.c. wire.

This data applies for mixer and oscillator coils if their leads to the condensers are no more than 1" long.

After completion of the wiring, the power can be applied and voltages checked. 100 to 150 volts h.t. is sufficient and current drain is approximately

of a 2 metre Ham in your vicinity, ask him to run a tone test signal for you. It is a little frustrating if you have no signal at all to aid in the initial tuning! Try and get the oscillator on the low side of the band, i.e. tuning 137 to 141 Mc. The trimmer should be about one-third or half maximum capacity for this frequency. Adjust C1 for peak in noise with antenna connected.

By the way, a half wave antenna for 144 Mc. is 39 inches long. Stiff copper wire or tubing will enable a self supporting dipole to be constructed. Get your antenna up as high as possible and in the clear. Contact your local V.h.f. Group for details of stations active in your area, and don't forget that most of the W.I.A. Divisions have an instrument library with v.h.f. test gear for use by members.

* 60 Shannon Street, Box Hill North, E.13, Vic.

Modifying the Bendix RA-10-FA Receiver

BY E. CORNELIUS,* VK6EC

This receiver is widely used among Amateurs and lends itself admirably to modification for Amateur purposes.

The modifications incorporated here are as follows:—

1. Improved mechanical layout.
2. Amateur bandspread on 3.5, 7, 14 and 21 Mc. bands.
3. Addition of a series-shunt noise limiter.
4. Addition of an S meter.

MECHANICAL LAYOUT

The wave-change and tuning controls come out at the ends, making the receiver inconveniently deep, and restricting available panel space for controls. Right angle drives were tried, and were unsatisfactory.

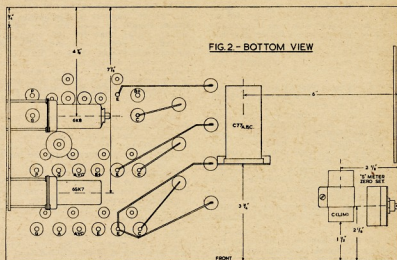
The major change (credit to VK6GB) is to rotate the coil boxes and tuning gang through 90°, and bring all controls out of the long side, remote from the tube line-up. This will be the front, and a false panel, which may be used for rack mounting, is spaced 3" in front of the receiver box.

Fig. 1 shows from above the new layout of coil boxes and gang, the gang shaft being centrally mounted. This is fitted with an Eddystone log dial.

It is assumed that prior to any work outlined here, those interested will have removed generator and filter, and wave-change motor and gears. Also have re-wired the filaments for 6 volt operation, and removed the filament jumper and resistor tag strip.

The new layout of coils makes it essential to re-locate the r.f. and mixer stages. This can be done as shown in Fig. 2 by mounting them under the chassis, allowing very short leads to their respective coil boxes.

Fig. 2 shows the relevant components in the new under chassis layout. The



section of resistor strip for the 6K7 r.f. stage is cut from the remainder of the strip on the rear apron and re-located toward the front, behind the r.f. stage socket. The 6K3 screen and cathode strip is also mounted on this end, next to the strip abovementioned. The valve sockets are spaced away from the end by 1/4" bolts as stand-offs.

The electrolytic filter capacitor group (3 x 30 uF.) is mounted on a bracket, horizontally under the chassis as shown, as it fouls the new position for the gang capacitor.

All the controls are brought out through the front apron, allowing room for a 2" S meter in the panel in the right hand top corner. This will project through the front of the receiver box

as well but clears the front (Ant.) coil box. A 3" loudspeaker is mounted on the left hand side of the panel, the cutout in line with the dial. See Fig. 3 for panel layout.

The wave-change shaft extends through a bush in the front of the receiver with a 1" brass pulley, slotted for the pin in the shaft, and taking a 3/16" wide flat belt of shim brass to a similar pulley. This pulley is mounted on the shaft of a Yaxley switch plate, at extreme bottom right. The plate is used solely for indexing. The belt and pulleys are shown dotted in Fig. 3.

An a.c. power supply is mounted out-board, on a separate chassis, along part of the rear of the receiver, and fixed to it. The transformer and filter choke available were too large for mounting inside, but this would be possible with miniature types. The intercom. relay, left in situ, was wired to break the transformer centre tap, as "send-receive" relay.

BANDSPREADING

The coverage of the receiver was—

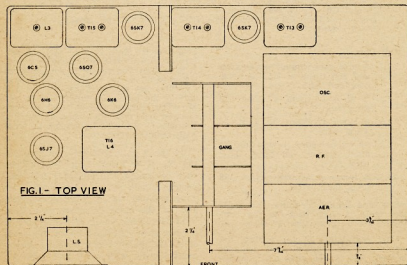
- Band 1: 200-400 Kc.
- 2: 2-5 Mc.
- 3: 2-5 Mc.
- 4: 5-10 Mc.

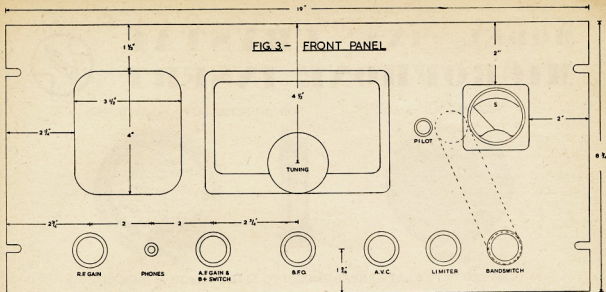
Bandspread coverage after amendment is—

- Band 1: 3.5-3.8 Mc.
- 2: 7.0-7.15 Mc.
- 3: 14.0-14.35 Mc.
- 4: 21.0-21.45 Mc.

The basic original oscillator and r.f. circuits are shown in Figs. 4a and 4b. The new bandspread circuits are in Figs. 4c and 4d. Switching points are marked at X.

It will be seen that the r.f. and aerial coils are switched at three positions, requiring an extra switch wafer for each box. One may be scored from the auto-wave-change homing mechanism, but





any standard Oak wafer will do. There is ample room in the boxes for the new wafer.

In each case Cs is a band setting capacitor, variable in the oscillator box. Cp is a padding capacitor to reduce the frequency coverage to bandspread only. It is variable in every case. C is in parallel with each section of the gang, and prevents crowding of the scale at the high frequency end. C is 100 pF., and mounted in each box across the gang terminal and the earth terminal next to it.

OSCILLATOR SECTION

Electrical

Band (1) 3.5-3.8 Mc.

Oscillator coverage: 5.13-5.43 Mc. (using 1630 Kc. i.f.).

Coil: 2-5 Mc. coil unaltered.

Cs: 50 pF. fixed plus 50 pF. (17 plate) trimmer (10% in mesh).

Cp: 50 pF. fixed plus 25 pF. (9 plate) trimmer (90% in mesh).

Band (2) 7.0-7.15 Mc.

Oscillator coverage: 8.63-8.78 Mc.

Coil: 2-5 Mc. coil as follows:—

Pri. 5 turns, Sec. 8 turns, spaced 1/8".

Cs: 100 pF. fixed plus 50 pF. trimmer (90%).

Cp: 30 pF. plus 25 pF. trimmer (50%).

Band (3) 14.0-14.35 Mc.

Oscillator coverage: 15.63-15.98 Mc.

Coil: 5-10 Mc. coil as follows:—

Pri. 4 turns, Sec. 5 turns, spaced 1/8".

Cs: 50 pF. plus 25 pF. trimmer (50%).

Cp: 20 pF. plus 25 pF. trimmer (60%).

Band (4) 21.0-21.45 Mc.

Oscillator coverage: 22.63-23.08 Mc.

Coil: 200-400 Kc. former only, with slug;

Pri. 3 turns, Sec. 4 turns, spaced 3/32".

Cs: 30 pF. plus 25 pF. trimmer (90%).

Cp: 20 pF. plus 25 pF. trimmer (50%).

Mechanical

Disconnect leads to xtal 1 and 2 terminals, and leave these vacant. Mount 100 pF. capacitor (C) in box across gang terminal and earth. Relocate Cs and Cp trimmers as below so that 50 pF. and 25 pF. units are located near the coils with which they are used, transferring left hand and right hand assemblies as need be, for short wiring to Cp.

Trimmer layout is as follows, viewed from front of box:—

Cp toward front of box.

Left hand lower pair—3.5 Mc.

Left hand upper pair—7.0 Mc.

Right hand upper pair—14.0 Mc.

Right hand lower pair—21.0 Mc.

Coil layout, viewed from front of receiver:—

Left to right—3.5, 7.0, 14.0, 21.0 Mc.

Note.—The gang capacitor will make screwdriver adjustment of Cp on 3.5

Mc. impossible. A cranked and flattened piece of 14 gauge copper wire can be used to adjust this trimmer.

Before closing box, mark all trimmer adjusting screws with indelible pencil to indicate maximum capacitance, when in line with an arrow on the box.

R.F. SECTION

Electrical

Band (1) 3.5-3.8 Mc.

Coil: 2-5 Mc. coil unaltered.

Cs: 50 pF.

Cp: 75 pF. plus 25 pF. trimmer (50%).

Band (2) 7.0-7.15 Mc.

Coil: 2-5 Mc. as follows:—

Pri. unaltered, Sec. reduce to 16 turns.

Cs: 20 pF.

Cp: 50 pF. trimmer (50%).

Band (3) 14.0-14.35 Mc.

Coil: 5-10 Mc. unaltered.

Cs: 20 pF.

Cp: 10 pF. plus 25 pF. trimmer (50%).

Band (4) 21.0-21.45 Mc.

Coil: 200-400 Kc. former and slug, over which is fixed, at slug end, a Kingsley KCH3 oscillator coil, cut to length to fit, or on 1/2" former—Pri. 4.25 turns interwound with the bottom of secondary (KCH3 with one turn added), Sec. 7.5 turns at 16 turns per inch.

Cs: nil.

Cp: 25 pF. trimmer (60%).

Mechanical

Coil layout as for oscillator. Remove 5 pF. top coupling capacitor. Connect 100 pF. across gang terminal and earth (C).

Viewed from front of receiver, trimmer layout is:—

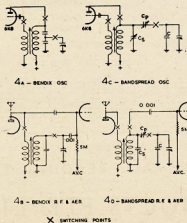
Left rear—3.5 Mc.

Left front—7.0 Mc.

Right front—14.0 Mc.

Right rear—21.0 Mc.

Add new switch wafer to accommodate gang capacitor switching.



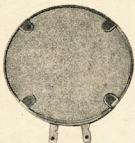
× SWITCHING PORTS

FIG. 4 - BANDSPREAD

MODEL "1XA" CRYSTAL MICROPHONE INSERT



AUSTRALIAN MADE — — FOR AUSTRALIAN CONDITIONS



FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
- Small — compact — lightweight — durable.
- Will not blast from close speaking.
- Precision engineering ensures realistic reproduction and high output with long life and dependable operation.

- The only unit available with a genuine sintered metal filter.
- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyrfil" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved. Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case $1\frac{1}{2}$ " diameter (rear), $\frac{3}{8}$ " thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
Output Level = -45 db (0 db = 1 volt/dyne/cm²)
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

ZEPHYR PRODUCTS PTY. LTD.

118 WATTLETREE RD.,
ARMADALE, VICTORIA

Electrical

Cp: 25 pF, trimmer (90%).

As for r.f. coils,

ALIGNMENT

Connect v.t.v.m. to a.v.c. line, or use S meter if installed, as alignment indicator.

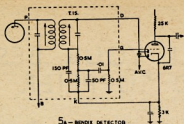
Oscillator

Check to see that no trimmer has reached maximum or minimum capacitance. If so, a change in the fixed capacitor in parallel, or alteration of the slug setting, is indicated.

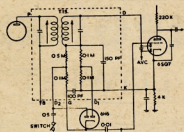
Aerial and R.F. Coils

Aerial and R.F. Coils

Using the same technique as in the oscillator, align the upper band edge with the slug, and the lower band edge with Cs.



5A - BONDIE DETECTOR



5. LIMITER MODIFIC



5c - BOTTOM VIEW OF TUB

FIG. 5 - NOISE LIMITER

After complete alignment, check that v.t.v.m. or S meter gives a substantially constant reading at several points in each band. There should be less than 5% variation in sensitivity over any band.

NOISE LIMITER

The noise limiter fitted is a series-shunt type described in "Wireless World" about 1950, using a double diode (6H16) and is very effective. The tube is mounted in the spare 6K6 socket (V8). The limiter circuit results in a 3 db loss in audio gain, and this has been made good by changing V5 (6R7) for a 6SQ7, with appropriate change in cathode resistor and plate load. It is doubtful if the change in tube is necessary, and most Amateurs would find there is adequate audio gain even with the 3 db loss mentioned. In my case the 6R7 was faulty, and the 6SQ7 a preferred Australian type.

Remove T15, the 3rd i.f. transformer. Inside the can is the filter assembly whose circuit is shown at Fig. 5a.

Modify the circuit as in Fig. 5b, bringing the leads D1 and D2 through new holes drilled as shown in Fig. 5c, and

To cut the limiter out of circuit, the switch is opened, and the audio by-pass capacitor becomes inoperative. The constants shown give limiting at about a 90% modulation level, and the drop in apparent level of speech, when the limiter is switched in, is just noticeable.

The 6SQ7 grid coupling capacitor and leak are wired between the sockets, when recovered from inside T15.

To replace R26 and R23, the 6R7 plate load and cathode resistor, with the new values shown in Fig. 5b, they are located as shown in Fig. 6b, showing part of the resistor strip on the audio end of the receiver. R23 from 3000 to 4000 ohms; R26 from 25,000 ohms to 0.25 meg.

S METER

In order to avoid the necessity of switching out the meter, when the r.f. gain control is backed off, a separate S meter tube was installed. The socket is mounted under the rectangular cut-out for T17, which is not fitted. Any triode or pentode will serve, the constants shown being for a 6SJ7.

The circuit is shown in Fig. 6a. The meter zero set is mounted on the end apron toward the front, to clear the r.f. gain control, and is shown in Fig. 2. The resistors are mounted on the tag strip at this end, mentioned in reference to the noise limiter. This tag strip is shown in Fig. 6b, after modification.

The plate filter capacitors (6K6's) are removed to clear the end tags, and one wired across the working 6K6 socket. The earth wiring to the tags is re-arranged to free those necessary for the S meter network.

Calibration of S Meter.—Calibration is somewhat open to question, but if each operator's estimate of S9 is made mid scale, the following calibration points will be fairly accurate.

Full Scale	Units
10%	S1
20%	S3
30%	S5
40%	S7
50%	S9
62%	10 db over S9
75%	20 db over S9
90%	30 db over S9

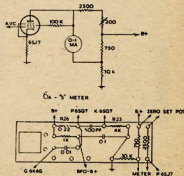


FIG.6 - "S" METER



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AND SUPPLIER OF

ALL RADIO COMPONENTS AT THE LOWEST PRICES

Continue to avail yourself of our Showroom
self-service system or mail order facilities.

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208 LITTLE LONSDALE STREET, MELBOURNE, VIC.

Phone: FB 3731

MARINE TYPE MRT12 TRANSCIEIVER

Designed for Small Ship operation. May also be used for Amateur Bushfire Work, etc. Very reasonably priced. Full details and descriptive leaflet from Firms handling Bright Star Crystals or direct.

Limited number Taylor Tubes:
TZ20s, £2/10/- each;
TB35s, £6/10/- each.

Transmitters altered for Bush
Fire and Fishing Boat Work.

CRYSTALS, as illustrated, 40
or 80 mx, AT or BT cut. Accuracy 0.02% of your specified frequency, £2/12/6 each.



20 metre Zero
Drift £5 each.
Large, 40 or 80
mx unmounted,
£2 each.

Special and Commercial Crystals—Prices on application.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-196 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

Crystals re-ground, £1 each.

DC11 TYPE CRYSTAL HOLDERS WANTED. ANY QUANTITY.

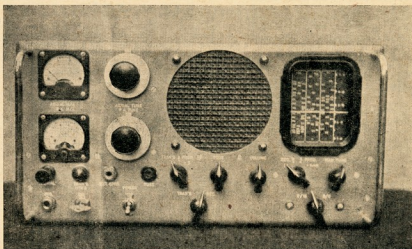
Screw-type Neutralising Condens. (National type), suits all triode tubes, polystyrene insulation, 19/6 ea.

BRIGHT STAR RADIO

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Phone: UM 3387

Prompt delivery on all Country and Interstate Orders. Satisfaction Guaranteed.



Countryman's Double Conversion Receiver

BY G. LOVEDAY*

The Bendix RA-10-FA Receiver has many possibilities as a good receiver for those with home lighting plants. It can be fitted with the "QX", switched bandspread and a converter for all-band operation. But this rather adds up to a rather high battery drain, especially with 12 volt plants.

The author has solved the problem by another way; maybe it has its drawbacks according to those of higher radio knowledge, however for a shallow pocket it works f.b. and uses "junk box" parts.

Essentially it is the RA-10-FA circuit. The valves are 12 volt, but the 6.3 series can be used with no change. The first i.f. channel crystal oscillator is 4.6 Mc. (from Command receiver), the i.f. being 5.055 Mc.; the converter is a 12BE6.

The second i.f. was changed to 455 Kc., two stages being retained. The selectivity is quite reasonable. Plug-in coils are used. The r.f. gain has not

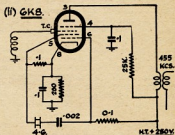
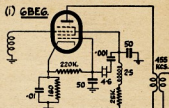
been used and it was found at the author's location that suppressor a.v.c. was better than the conventional set-up.

Many will recognise the b.f.o. idea, as is used in Command receivers and is quite a good way of cutting down drain. The b.f.o. note is altered by slight detuning.

Coils for 40 and 80 metres were wound on 1½" diameter ribbed formers, likewise 20 metres. The 6, 10 and 15 metre coils were wound on the original formers of RA-10-FA, or could be wound on plastic formers of about ¾" diameter and mounted in appropriate sockets. The sockets should be of high quality, the writer using 4-pin, 5-pin and 6-pin Steatite for r.f., mixer and oscillator.

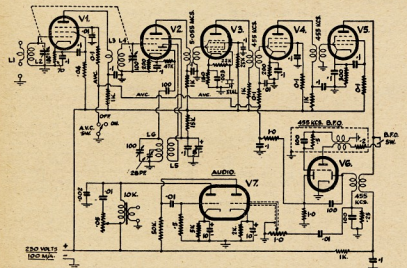
The first i.f. coils are wound on 7½" diameter former (1600 Kc. i.f. stripped) and consists of approximately 30 turns of 24 B. and S. enamel. Coils are spaced by 7½" and tuned by 100 pF. mica.

The second converter oscillator may appear unorthodox, however in the writer's case it works quite OK. Alternatively the following ideas could be tried if the above fails to oscillate.



The bandset oscillator is tuned by 2½:1 friction drive, and the bandspread by a 10:1 mechanism.

* "Wirra," Ellimbah, Queensland.



V1—12AU6 or 6AU6 R.F.
V2—12K8, X76M, or X81M 1st Converter.
V3—12BE6 or 6BE6 2nd Converter.
V4—12SK7 or 6SK7 455 Kc. 1st I.F.

V5—12SK7 or 6SK7 455 Kc. 2nd I.F.
V6—12SR7 or 6R7 B.F.O., Det., A.V.C.
V7—12AU7 or 6SN7 Audio.

DETAILS OF COILS

Band	Coil Diam.	L1		L2		L3		L4		L5		L6		Tap
		Turns	Length	Turns	Length	Turns	Length	Turns	Length	Turns	Length	Turns	Length	
80	1½"	10	40	c.w.		14	40	c.w.		5	13½	1½"		10
40	1½"	8	23	1½"		6	23	1½"		4½	9	1½"		2½
20	1½"	5	12	1½"		6	12	1½"		3½	5½	1½"		2
15	¾"	*5	10	¾"		5	10	¾"		4	8	¾"		†
10	¾"	4	6	¾"		4	6	¾"		3½	4½	¾"		†

All Primaries 30 S.W.G. enamel, Secondaries 21 B. & S. enamel, unless specified.

* This Primary is wound with 21 B. & S. enamel.

† Some experiment will be necessary to get the best tapping position, also the spacing of turns.

HINTS AND KINKS

SOLDERING MINIATURE COMPONENTS

With the trend these days towards miniaturisation of electronic equipment, a new technique becomes desirable when handling the mid-set components. Because of their small size, such components, e.g. crystal diodes, the new Hi-K ceramic condensers, one-third and one-half watt resistors, etc., heat passed on, when soldering, are concentrated in a very small area rather than over the area of a larger component, can wreck havoc.

What to do? Use a small pointed soldering iron and grasp the lead on the component side of the point of soldering with a pair of long nose pliers to conduct the heat away. If the jaws of the pliers are cut back and replaced with copper jaws brazed on, a much better (faster) heat conductivity will result.

Sometimes, a small piece of damp cloth can serve a similar purpose when it is necessary to hold a component in one's fingers during soldering operations, protecting both the component and the fingers!—VK3YS.

ACCURATE FREQUENCY TRANSMISSION RESULTS

Following is the result of the Accurate Frequency Transmissions from VK3WI on 19th November, 1953:—

7000 Kc.	....	34 cycles low
7010	....	25 "
7030	....	14 "
7050	....	5 "
7070	....	18 "
7090	....	15 "
7110	....	20 "
7130	....	36 "
7150	....	13 "

NATIONAL FIELD DAY, 1954

RULES

1. The National Field Day Contest of the Wireless Institute of Australia will be held on **Sunday, 14th February, 1954**. The Contest will be of 12 hours' duration, commencing at 0900 hours E.A.S.T. and will continue until 2100 hours E.A.S.T.

2. The Contest is limited to portable stations operating within the Commonwealth and its Mandated Territories on a power not exceeding 25 watts input to the final stage with the aerial connected, with a special section for fixed stations working to portable stations, and a special multiplier which, it is hoped, will encourage the use of low power equipment.

3. A portable station for the purpose of the Contest is defined as one whose power is not derived from either private or public mains, shall not be located closer than five miles airline from the home of the operator/s and shall not be situated in any occupied dwelling or building.

4. No apparatus is to be set up or erected on the site of the portable station earlier than 24 hours prior to the commencement of the Contest. A station may be moved from one site within a State to another within the same State during the Contest.

5. More than one operator may be used in the operation of the portable station, provided that all operators are licensed Amateurs.

6. Operation may be on any of the recognised Amateur bands, and more than one transmitter may be used, providing that only one transmitter is used at any one time.

7. When calling, c.w. stations will use the call "CQ NFD," and phone stations will use the call "CQ National Field Day" to indicate that they are portable stations. Attention is directed to the requirements for portable operation as defined in the P.M.G. Handbook for the Guidance of Amateur Operators.

8. **Sections:** The Contest is divided into four sections, namely:—

- (a) Open,
- (b) C.w.,
- (c) Phone,
- (d) Fixed Station.

The open section will consist of phone and c.w. Portable station participants may enter each of sections (a), (b), and (c), provided a separate log is entered in each case.

9. Logs must be forwarded to the Contest Committee through the Division in time to reach Box 1734, G.P.O., Sydney, not later than 12th March, 1954.

10. Logs must be filled in in the following order: Date, Time (E.A.S.T.), Band, Emission, Power input to the final stage with the aerial connected, Call Sign of the station contacted, RST number sent, RST number received, location of station contacted, points claimed. The log must be headed with the title of the Contest, section entered, call sign of the competitor, location of the station. At the conclusion of the log a summary of contacts must be shown together with a description of the equipment used, including h.t. voltage to the final stage, tube/s in p.a. stage, antenna used, and call signs of all operators.

11. The completed log must be signed by each of the operators with a statement that the P.M.G. Regulations and the rules of the Contest have been observed.

12. The decisions of the Federal Contest Committee will be final in all matters concerning the Contest.

13. Failure to completely observe the conditions of rule 10 will lead to automatic disqualification of a competitor.

14. **Scoring:** For the purpose of the Field Day the following constitute VK Districts: VK2, VK3, VK4, VK5 (South Australia), VK5 (Northern Territory), VK6, VK9.

15. Serial numbers must be exchanged during the Contest. Failure to record current serial numbers will mean loss of all points for that contact. Serial numbers will be as follows: The first three figures will be the RST report in the c.w. section, followed by the serial number of the contact. Serial numbers may commence with any number between 001 and 100 for the first contact, increasing by one for each successive contact. In the phone section the first two figures will be the RS as in the c.w. section, followed by the three

serial numbers. In addition, the QTH must be given in all cases.

16. Points will be awarded as follows:

Portable Stations—

- (a) For contacts with a fixed station within the Commonwealth (Rule 14) including the competitor's own State 1 point
- (b) For contacts with other portable stations within the same State 2 points
- (c) For contacts with stations in Asia, Oceania, North America, 3 points
- (d) For contacts with stations in other countries other than (a), (b) and (c) 5 points
- (e) For contacts with other portable stations outside the competitor's own State 10 points

In order to encourage QRP operation, for portable stations the total number of points scored will be divided by the power input in watts (with the aerial connected).

If more than one transmitter and/or input power is used for portable contest purposes, the "power in watts" will be calculated as the average.

Fixed Stations—

- (f) For contacts with portable stations in the Contest within the same State 2 points
- (g) For contacts with portable stations in the Contest outside the State 5 points

17. **Awards:** An attractive certificate will be forwarded to the outright winners in each section, namely, Open, Phone, C.w. Certificates will also be awarded to the winners of each section in each State, and to the fixed station in each State with the greatest number of points gained in contacting portable stations in the Contest. Further certificates may be awarded at the discretion of the Federal Contest Committee. The outright winners are not eligible for State Awards.

18. Certificates will be awarded to each operator of the winning stations, provided each operator has contacted at least 25 per cent. of the stations contacted.

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Always find the Ham on the job ready to serve his fellowmen. The well equipped Ham always delivers the message. ARE YOU ONE OF THESE?

FOR ADVICE—WRITE OR RING

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Phone: UY 3974



PRINCIPAL CHARACTERISTICS OF THE QQV03-20*

HEATER	Series	Parallel
Vh	12.6	6.3V
Ih	0.46	1.2A

CAPACITANCES

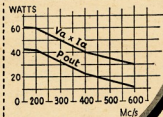
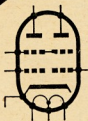
Each Section		
cgl-all	6.5 μ F	
ca-all	2.0 μ F	
Two Sections in Push-Pull		
cout	1.3 μ F	
cin	4.0 μ F	

LIMITING VALUES

As Class "C" push-pull amplifier for C.W. Telegraphy or for F.M.

Va max.	400 V
pa max.	2 x 10 W
Vg2 max.	250 V
pg2 max.	2 x 2 W
Vg1 max.	-75 V
pg1 max.	2 x 0.5 W
Ih max.	2 x 55 mA
f max. (at reduced ratings)	600 Mc/s

BASE B7A



*CV2799

A high performance Double Tetrode for the new U.H.F. wave-band allocations

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As a result of new and important design features, this valve has the outstanding advantages of high anode efficiency, excellent power gain, low filament consumption and small physical dimensions. In addition, being of conventional all glass technique, the QQV03-20 does

not require the complex and expensive circuitry that is normally associated with the disc-seal type of U.H.F. valves.

This double tetrode has special advantages in compact communications equipment, where, due to its small size and low filament consumption, it enables maximum savings in space to be made.

Brief technical details of the QQV03-20 are given above. More comprehensive information will be gladly supplied on request.

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MR7-53



DX COUNTRIES OF THE WORLD

The list of Countries as hereunder, and as amended from time to time in Federal Notes, is the Official List to be used in connection with the issue of the Australian DX C.C. Award.

The list below shows first the Country, the Zone number in parenthesis (as used by the "CQ" W.A.Z. Award) and the Amateur Prefix.

Aden & Socotra Is. (21) VS9	England (14)	G
Afghanistan (21)	Eritrea & Ethiopia (37) ET	T
Alaska (1)	Faeroes, The (14)	OY
Albania (15)	Falkland Islands (13) VP8	P
Aldabra Islands (39)	Fanning Is., Washington	
Algeria (33)	Is. Christmas Is.	
Andaman & Nicobar Is. (26) VU5	(31)	VR3
Andorra (14)	Fiji Islands (32)	VR2
Anglo-Egypt. Sudan (34) ST	Finland (15)	OH
Angola (36)	Formosa (24)	C3
Argentina (13)	France (14)	F
Ascension Island (36) ZD8	French Equa. Africa (36) FQ	
Australia (inc. Tas.) (29, 30)	French Indo-China (26) FI	
Austria (15)	French Oceania (Tahiti) FO	
Azores Islands (14)	French West Africa (35) FF	
Bahama Islands (8) VP7	Fridtjof Nansen Land	
Bahrain Island (21) MP4B	(Arantz Josef Land)	
Baker, Howland & Am. Phoenix Is. (31) KB6	(40)	UA1
Balearic Islands (14) EA8	Galapagos Is. (10) (HC8)	
Barbados (8)	Gambia (35)	ZD3
Basutoland (38)	Germany (14)	
Bechuanaland (38)	DJ, DL, DM	
Belgian Congo (36) OQ5	ZB2	
Belgium (14)	Gibraltar (14)	
Bermuda Islands (5) VP9	Is. (31)	VR1
Bhutan (22)	Goa (Portu. India) (22) CR8	
Bolivia (10)	Gold Coast (and British Togoland) (35)	ZD4
Bonin & Volcano Is. (Iwo Jima) (27)	Greece (20)	SV
Borneo, Brit. Nth. (28) ZC5	Greenland (40)	OX
Borneo, Netherl'ds (28) PK5	Gadeloupe (8)	FG
Brazil (11)	Guantanamo Bay (8) KG4	
Brunei (28)	Guatemala (7)	TG
Bulgaria (20)	Guiana, British (9) VP3	
Burma (26)	Guiana, French, and Imini (9)	FY
Cameroons, French (36) FE	Guiana, Netherlands (Surinam) (9)	PZ
Canada (2, 3, 4, 5) VE, VO	Guinea, Portuguese (35) CR5	
Canal Zone (7)	Guinea, Spanish (35) EA0	
Canary Islands (33) EA8	Haiti (8)	HH
Cape Verde Is. (35) CR4	Hawaiian Islands (31) KH6	
Caroline Islands (27) KC6	Heard Island (39)	VK1
Cayman Islands (8) VP5	Honduras (7)	HR
Celebes & Molucca Is. (28) PK6	Honduras, British (7) VP1	
Ceylon (22)	Hong Kong (24)	V56
Chagos Islands (39) VQ8	Hungary (15)	HA
Channel Islands (14) GC	Iceland (40)	TF
Chile (12)	Ifni (33)	EA9
China (23, 24)	Iran (22)	VU
Christmas Is. (29) ZC3	Iraq (21)	EP, EQ
Clipperton Is. (7) FO7	Ireland, Northern (14) GI	
Cocos Island (7)	Isle of Man (14)	GD
Cocos Islands (29) VK1, ZC2	Israel (20)	4X4
Colombia (9)	Italy (15)	I
Comoro Islands (39) FB8	Jamaica (8)	VP5
Cook Islands (32) ZK1	Jan Mayen Island (40)	LA, LB
Corsica (15)	Japan (25)	KA, JA
Costa Rica (7)	Jarvis and Palmyra Is. (31)	KP6
Crete (8)	Java (28)	PK
Cuba (8)	Johnston Island (31)	KJ6
Cyprus (20) (MD7) ZC4	Kenya (37)	VQ4
Czechoslovakia (15) OK	Kerguelon Is. (39)	FB8
Denmark (14)	Korea (25)	HL
Dodecanese Is. (Rhodes) (20)	Kuwait (21) (VT1) MP4K	
Dominican Republic (8) HI	Laccadive Is. (22) VU4	
Easter Island (12) CE0	Lebanon (20) OD6, AR8	
Ecuador (10)	Leeward Is. (8)	VP2
Egypt (34)	Liberia (35)	EL
Eire (Irish Free State) EI	Libya (34)	5A2 (MC1, MD1, MD2, MT2)

Liechtenstein (14)	HE1	Scotland (14)	GM
Luxembourg (14)	LX	Sechelles (39)	VQ9
Macau (24)	CR9	Siam (26)	HS
Macquarie Is. (30)	VK1	Sierre Leone (35)	ZD1
Madagascar (39)	FB	Sikkim (22)	AC3
Madeira Islands (33) CT3		Singapore (28)	VS1
Malaya (28)	VS2	Solomon Is. (28)	VR4
Maldives Islands (22) VS9		Somalland, Brit. (37) VQ6	
Malta (15)	ZB1	Somalland, French (37) FL	
Manchuria (24)	C9	Somalland, Italian (37)	
Marianas Is. (Guam) (27)	KG6	South Georgia (13)	VP8
Marion Is. (and Prince Edward Is.) (38)	ZS2	South Orkney Is. (13) VP8	
Marshall Islands (31) KM6		South Sandwich Is. (13) VP8	
Martinique (8)	FM	South Shetland Is. (13) VP8	
Mauritius (39)	VQ8	Southwest Africa (38) ZS3	
Mexico (6)	XE, XF	Soviet Union:	
Midway Island (31) KM6		Europ. R.S.F.S.R. (15, 16, 17) UA1, 2, 3, 4, 6	
Miquelon and St. Pierre Is. (5)	PP	Asiatic R.S.F.S.R. (17, 18, 19, 25)	UA9, 0
Monaco (14)	3A2	Ukraine (16)	UB5
Mongolian Rep. (Outer) (23)	(JT)	Belorus'n S.S.R. (16) UC2	
Morocco, French (33) CN8		Azerbaijan (21) UD6	
Morocco, Spanish (33) AR9		Georgia (21)	UF6
Mozambique (37)	CR7	Armenia (21)	UG6
Nepal (28)	NE1, VU7	Turkmen (17)	UI8
Netherlands (14) PA, PI		Uzbek (17)	UI8
Netherlands West Indies (9)	PJ	Tadzhik (17)	UJ8
New Caledonia (32) FK		Kazakh (17)	UL7
New Guinea, Nether. (28)	PK7, JZ	Kirghiz (17)	UM8
New Guinea, Territory of (28)	VK9	Karelo-Finnish Republic (16)	UN1
New Hebrides (32) FU, YJ		Moldavia (16)	UO5
New Zealand (32)	ZL	Lithuania (15)	UP2
Nicaragua (7)	YN	Latvia (15)	UQ2
Nigeria (35, 36)	ZD2	Estonia (15)	UR2
Niue (32)	ZK2	Spain (14)	EA
Norfolk Island (32) VK9		Sumatra (28)	PK4
Norway (14)	LA, LB	Svalbard (Spitzbergen) (40)	LA, LB
Nyasaland (37)	ZD6	Swan Island (7)	KS4
Oman, Sultanate (21) VS9		Swaziland (38)	ZS7
Oman, Trucial (21) VS9, MP4H		Sweden (14)	SL, SM
Pakistan (22)	AP	Switzerland (14)	HB
Palau (Pelew) Is. (27) KC6		Syria (20)	YK
Palestine (20)	ZC6, ZC8	Tanganyika Ter. (37) VQ3	
Panama (7)	HP	Tangier Zone (33)	EK, KT1, CN2
Papua Territory (28)	VK9	Tannu Tuva Rep. (23)	UA0
Paraguay (11)	ZP	Tibet (23)	AC4
Peru (10)	OA	Timor, Portuguese (28) CR10	
Philippine Islands (27) DU		Togoland, French (35) FD	
Pitcairn Island (32) VR6		Tokelau (Union) Is. (31)	
Poland (15)	SP	Tonga (Friendly) Island (32)	VR5
Portugal (14)	CT1	Transjordan (20) ZC1, JY	
Principe and Sao Thome Is. (36)	CR5	Trieste (15)	AG2, MF2
Puerto Rico (8)	KP4	Trinidad & Tobago (9) VP4	
Qatar (21)	MP4Q	Tristan da Cunha and Gough Is. (38)	ZD9
Reunion Island (37) FR7		Tunisia (33)	(FT) V8
Rhodesia, Northern (36) VQ2		Turkey (20)	TA
Rhodesia, Southern (38) ZE		Turks & Caicos Is. (8) VP5	
Rio de Oro (33)	EA9	Uganda (37)	VQ5
Rumania (20)	YO	Union of S. Africa (38) ZS	
Ryukyu Is. (Okinawa) (25)	KR6	United States of America (3, 4, 5) WN, K, W	
Saarland (15)	9S4	Uruguay (13)	CX
St. Helena (36)	ZD7	Vatican City State (15) HV	
St. Paul & New Amsterdam Is. (39)	FB8	Venezuela (9)	VV
Salvador (7)	YS	Virgin Islands (8)	KV4
Samoa, American (32) KS6		Wales Island (31)	KW6
Samoa, Western (32) ZM		Wake (14)	GW
San Marino (15)	(MI)	Wallis Island (32)	FW8
Sarawak (28)	VS4	Windward Is. (8, 9)	VP2
Sardinia (15)	IS	Wrangel Island (19)	
Saudi Arabia (Hebjaz & Nejd) (21)	HZ	Yemen (21)	(4W)
		Yugoslavia (15)	YT, YU
		Zanzibar (37)	VQ1

FIFTY MEGACYCLES AND ABOVE

VICTORIAN V.H.F. GROUP

The November v.h.f. meeting was a great success, about 30 being present. The major portion of the time was devoted to a display of v.h.f. gear, which proved to be of interest to all, and of special interest to existing and aspiring Limited Class licensees. Among the items shown were low power tx's, converters, complete 2 mx mobile stations, grid dip osc's., antennae, GQRE/40 p.a., etc. 3JO called on each owner to give a brief description of his contribution. A mobile demonstration was given by 3LN, progress being followed with 3JO's modified ZL8 converter.

Referring to v.h.f. field days, it was agreed to make the first one for 1954 to coincide with the National Field Day on Sunday, 14th Feb.

The November C.D.E.N. triangulation test went off well, 3ACH operating as control station. The six locations from which 3LN, as target station, made five-minute transmissions were as follows: 1. Port Melbourne West; 2. Elsternwick; 3. Hawthorn East; 4. Surrey Hills; 5. Jolimont Station; 6. Maribyrnong. The next one is on 13th January. The first mobile fox hunt is to be on 10th February, so please make an effort to get a 2 mx mobile station ready by then.

Recent 2 mx newcomers to the Melbourne area are ex-2OK and ex-2ABP; welcome chaps. 2DG at Lancefield is now set up to work two-way on the 2 mx band.

6 mx openings have been quite frequent during the latter part of November with the sporadic E season getting into full swing. All States and ZL have participated in openings since about 15th Nov., and on 28th VK8DB broke through and gave many a good contact. He operates on 56.2 mc. and calls and listens each evening on the hour and half hour. Country stations including 3CI, 3ZL, 3UI, 3ATN, 3APP have been doing well. 3CI got two from the west—6BO and 6HK. We understand that 4LK and 4JW in northern Queensland are keeping a watch for 50 Mc. sigs.

From "QST" we learn that the 429 Mc. record has been pushed up further to 410 miles between WIRFU and WATLM during last July. Six mx mobiles at Manilla during the State Convention were 3HK, 3APP, and 3UL. 3LN took his 2 mx mobile—3ABA.

SOUTH AUSTRALIA

The main activity for Nov. appears to be on 6 mx and this band has blossomed forth quite early in the year to provide openings from VK3 to all States and ZL. Some openings have the appearance of sporadic E propagation, whilst some from VK3 to VK6 have confirmed predictions obtained from the most unusual series of weather maps that I have come across, for super refraction. Cold fronts following in regular procession across Southern Australia 24 to 48 hours apart. Clem 5GL tried 2 mx to VK6 without success, but 6 mx has been open consistently.

Ron 5MK in his ideal location has had quite a feast and has been good enough to give me a copy of his log which makes 6 mx transmission look like local contacts! VK4s seem to be the most consistent stations with VK3s running then close, and last night Albert 5ZL lived up to his call sign and exchanged reports with ZL1 and ZL2 with his brother Ron 5MK a close second. No signs of VK3s as yet, but the VK4s have been heard working them. An unbroken 21st to 26th inclusive shows just what to expect of 6 mx this coming summer.

Remember chaps that we haven't yet been through a sunspot minimum on this band and anyone who can spare the time to let me have copies of his loggings and times for co-ordination and analysis will be doing us all and the prediction service a good turn.

A new official call of 5ON from Charlie should be amongst the v.h.f. signals from now on—good hunting OM, you've got what it takes to make a first-rate Amateur. Keith 5MT amidst the 6 mx signals again. My cave's dropping on 40 mx gave me Harry 5KW as a starter from Berri, but no other news; guess Hughie and the gang will not be far behind. Brian 5CA, Ken 5BC working into VK3, while Hughie 5BC not hearing much at all, then 5BC working 6LC at Kalgoolie at 1900 SR.

A good sign to look for is 21 Mc. short skip. Oh, by, how we miss the old 33 Mc. beacon!

By the time you read this, the New Year will be with us, so I bid you all good hunting for 1954.

VK7WI TO OPERATE AT SCIENCE EXHIBITION

As part of the Tasmanian Sesqui-Centenary Celebrations, Science Exhibition is being held in the City Hall, Hobart, opening on 7th January and closing on 17th January, 1954.

Station VK7WI will be operating from the hall during the Exhibition and will be looking for contacts with other Amateur stations both inside and outside Australia.

Operating bands will be 80, 40 and 20 metres, and operating times between 10 a.m. and 10 p.m. every day the Exhibition is open.

As the public will be listening, stations contacted are asked to keep the conversation along everyday lines and avoid as much as possible technical terms.

Because of the high noise level at the hall, the receiver will be in a quiet location several miles away and will be remotely tuned by the operator in the hall. Stations calling VK7WI are therefore asked to give long calls so that the operator will have time to tune the band.

A special QSL card for the occasion is being printed and will be sent to all stations worked, and visiting Amateurs will be very welcome.

If you are in Hobart during the Exhibition we will be very pleased to see you.

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	Primary	Secondary					
894-23	500	2, 3.7, 8, 12.5	2	50-10,000	5	Line to Voice Coil	16/-
900-22	2,500, 5,000	2, 3.7, 8, 12.5, 15	1	*40-15,000	15	Single 807, EL34, etc., to V.C.	57/6
896-9	8,000, 10,000	2, 3.7, 8, 12.5, 15	1	30-15,000	15	P.P. 6V6Gs, A or AB1 to V.C.	62/6
897-9	8,000, 10,000	100, 125, 166, 250, 500	1	30-15,000	15	P.P. 6V6Gs, A or AB1 to Line	62/6
763-9	3,000, 5,000	2, 3.7, 8, 12.5, 15	1	40-20,000	15	P.P. 2A3s, A or AB1 to V.C.	62/6
809-26	500	2, 3.7, 8, 12.5, 15	1	50-20,000	15	Line to Voice Coil	42/6
870-26	10,000	2 or 8	1	*20-20,000	**6	P.P. 6V6Gs or 807s as Triodes	57/6
871-9	10,000	2 or 8	1	*20-20,000	12	P.P. 6V6Gs or 807s as Triodes	81/-
872-9	10,000	3.7 or 15	1	*20-20,000	12	P.P. 6V6Gs or 807s as Triodes	81/-
891-22	6,600	83, 100, 125, 166, 250, 500	1	50-12,000	35	P.P. 807s, AB1 to Line	82/6
892-22	3,200	50, 62, 83, 125, 250, 500	1	50-12,000	55	P.P. 807s, AB2 to Line	97/-

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- ★ "LOUDSPEAKERS" Briggs 11/9 " 9d. "
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- ★ "RADIOTRON VALVE MANUAL" A.W.A. 12/6 " 1/- "
- ★ "PHILIPS VALVE MANUAL" 8/6 " 9d. "
- ★ "RADIO SERVICE MANUAL," Vol. 11 24/- " 1/- "
- ★ "RADIO AMATEURS' HANDBOOK" A.R.R.L. 44/3 " 2/- "
- ★ "RADIO HANDBOOK" Dawley 66/- " 2/- "
- ★ "RADIO DATA SHEETS" Beatty 12/6 " 1/- "
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CANCELLATION OF ZONE 29 AWARD

DX HIGHLIGHTS

DL4QX intends to represent **Crete** on all bands early in 1954 (thanks BERS 195).

Nicobar Islands show some activity in **VU5AB** on 14 Mc. phone.

BAND CONDITIONS

3.5 Mc.: Openings to North and Central America, the Pacific Islands, and Far East occurred between 6900z and 1300z. Neville 2APL heard KP4PL and Ws, and 3AHH lists Ws, JA1CR, KH6PL.

7 Me.: Break-throughs to Africa around 1600-1900z were reported. Long-path conditions to Europe deteriorated while the continent was often workable over the short route (1900-2200z). The period for openings to the American Continents, Far East, and Pacific Islands was 0700-1500z.

[illegible]

14 Mc.: All reports mention a general deterioration of conditions. Erratic break-throughs to Africa occurred around 0500-0800z and between 1100z and 2100z. European and Middle East conditions via the long path were almost non-existent. The band opened, however, more or less regularly to those areas over the short route (1100-1400z). The American Continents could be contacted at odd times with weak to fair signal strengths.

Regarding Europe, Pacific Islands and W-land
 24 users in worable areas this month's e-mail activity is displayed by: the Macquarie Island station (ops. VKs 1AF, 1BA and 1RL) with KV4s, PK8, JA's, JZ0KFs, Noel ZAHN reports AP2R, VP9Bf, YIZAM, 4STXG; FIBAR, YKIAH, YO3ZR, ZS's, 2AMB work-ed CRIAH, and Alan GCM appears with a long list of ZS' and JA's. KEN 3JZ, CE3RE, TIT2TG, ZK2AA, ZK1AB, KV4, FASIH, KAOLJ, HH2FL, Ken SKR contacts are

* 10 Belgravia Ave., Box Hill North, E.12. Vic.

[illegible]

The band began under 200 Kc. brought it toward at
1A1f (BA IRL) VPSDF*, VPBPF*, VSAB*,
LUADD*, CEASAB*, HZSD*, and 2AHN lists
VQAGC*. The next line in is
LUBQB*, KR8*, 475Hz, VU2*, Rex JRP reports
CEIBF*, KAOL ITIA*, and 69KHz.
The next line in MP4BL*, MP4KC*,
XZXKN*, HSILWR* Vsas*. The next line in is
John comes ATN* the man with stacked vee-
beams, Ray demonstrates their excellent per-
formance, CRJAF*, VSGVG*, FFRAF*, KV4*, KP4*, PY*,
CE*, MIB*, HC*, LU*, ZS*, XZ*, HS*, YV*,
and 475 Hz. Next line in
ZMBSA*, VRMAE*, VUSAB*, KJ6AJ*, Aussie
JTn mentions QOQDZ*, ZSVVR*, LU*, X4ABO*
reports, and 475 Hz. Next line in
HSILWR* Zss*, Vsas* MP4BL*, MP4KC*,
SAZZT*, HZIAAb; while John AJW adds SVRAS*
reports, and 475 Hz. Next line in
ZMBAA*, XZXKN*, CRIA9*, AXN found in early
mornings VQA3I*, VGNXNK*, VQAC*,
and 475 Hz. Next line in
GLI spoke to MP4BL*, LST* Vs*, VTU2*; and
Doug TDZ managed MP4GAI*, MP4BL*,
and 475 Hz. Next line in
Norman Clarke* VQ4NZK*, LUBFB*, ZS*; and
Albert Ehrenreuter* of Box Hill, AU*, VQ4NL*,
and 475 Hz.

21 Me.: Conditions on this band were also relatively poor. However, several erratic openings to the American Continents (2100-0300z), Africa (0500-0700z), and Europe (0900-1200z) were reported.

24 Me.: Sporadic openings are reported from
 VK4 and VK9 to W-land, Pacific Islands and

Les 4XP worked W6ORD*, W6VAD*, KH6s*, JA1CR*, and MM stations Ws 5MET*, 1WDI*, 4VYU*, 3OZA*, 9GW heard W5s and W6s.

GENERAL NEWS

When these notes are reached you, this year's relief of our expedition to Macquarie and Heard Islands will be in progress. We say "welcome home" to Hams returning after a year's service, while our best wishes are extended to those who are on their way to both continents. Bill Storer, well-known as VKIBS and VKZEG, will use VKIEG, while a member of this first Australian Expedition to the Continent, Heard Island will be represented by VKIAB. George Delahoy, VKIDY (ex-VK3ADZ and VK5DY). Alan C. Hawker, VKIAC (ex-VK3IBJ), will keep Macquarie Island on the map. Good luck, chaps, and we hope to QSO you

GC3GS is looking for VK/ZL on 7080 Kc.
(phone) around 0815z (thanks 3ALL). Operators
of KA0IJ will shortly be relieved (thanks 3KR).
HS1WR and HS3CA are at present active in
Siam. ZK2AA and ZK2AB have now left Niue
Island (thanks BERS195). FB0ZZ was heard
several times (thanks 3YS). OYZZ has been
active on 14060 Kc. (thanks W6ALQ). ST2UU
is ex-FB0UU, VQ7UU, and VQ9UU. KC8AC is

In the March, 1952, issue of "A.R.," a paragraph on the Zone 29 Award was published, giving details and rules.

It is now known that the Federal Council have authorised the new "Worked All VK Call Areas Award," and in view of this, and particularly as there has been no applicant for the Zone 22 Award, the Western Australian Division of the Wireless Institute of Australialia has decided to cancel the latter award.

on Truk Island. He is mainly on 7 Mc. CR6A is active on 14 Mc. (around 1700z). EA2CN intends to work from Rio de Oro some time. AC4NC has been active on 14 Mc. phone. G2RO expects to make a trip to Guiana, the West Indies, and Falkland Islands at a later date.

QTHs of interest:—
 HSIWR—C/o. U.N.O., Bangkok, Siam.
 FIBAC—Via FEMT.
 FIBAE—Box 527, Saigon, French Indochina.
 ZC4 QSL Bureau—ZC4IP, Box 219, Limassol,
 Cyprus.

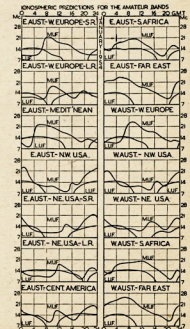
YK1AH—Box 35, Damascus, Syria.
AP2R—Box 2111, Karachi, Pakistan.
KR61N—M. Sgt. William H. Payton, AF6293618,
Det. 2, 1962d, A.A.C.S., Sq., Box 2, A.P.O.
239, C/o Postmaster San Francisco, Calif.

QSLs reached 2AHH: KC6AA, KZ5SW, LA9P
OA4V, VR3C, YN4CB, CT1FT, 2AHH: ZM6AA,
SP3PL, 5HI: F18AC, VK1HM, HC1LO, CO2OZ
KA8GC, KR6IN, 5JW: XW8AA, 5KU: LU8FBH
DU7SV, HR1AA, XZ2OM, PA0ZL, TP3TP
CT1JS: BERS195: W0MCF/C3, VK9WZ, Z56R
SM7BQH (3.5 Mc.): 8AHH: T12TG, KR6IN.

This month's thanks are due to VKs 1AF, 1BA, 1RL, 2QL, 2AHH, 2AMB, 2AMD, 2APL, 3CI, 3CX, 3KR, 3UR, 3WM, 3XU, 3AKO, 3ATN, 4FE, 4RW, 4TN, 4XJ, 5DP, 5HI, 5JW, 5KU, 5RK, 5WO, 5XN, 6LL, 7DZ, 9GW, 9YY, and s.w.f.s. BERS195 (VK3), Norman Clarke (VK2), Dave Jenkin (VK3), and Albert Ebenreuter.

This year's festive season is approaching fast; A Merry Christmas and a very Prosperous New Year to all readers! May 1954 bring us happy hunting on all bands and "good DX"

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No news of the Byron Bay boys, 2AGM and 2AFP, but we were pleased to hear Russ 2NT from Tenterfield on 7 Mc. on Sunday, 22nd.

The six metre band is coming in for a good deal of attention on the North Coast. Old stalwart, Crieff 2XO, is firing away already and has forwarded a 6 mx crystal to Len 2LR, thus driving the last nail to the coffin of the pile.

on Len's 6 mx rig. Newcomer WE 2AQI, from Armidale, is already on the job trying to contact Reg 2ATS, in Inverell. Also 2TG, of Belconnen, is working 4 mx and 2000 ft. and 3000 ft. well represented. The 2LR-2ADE-2AEV circuit is, of course, still functioning day by day.

By the time these notes are printed, we'll have had a visit to the Coast by Harold 2AHA of Newcastle, and Syd 2APS, of Tamworth. Spying out the ground for the next Urunga 2 mix the 2H will tell.

It is with regret that we note the cancellation of two call signs on the North Coast in the person of Doug 2DS, of Port Macquarie, and Jack 2VK, of Coff's Harbour. No doubt all the boys are sorry they are giving the game a "let" but the boys are young.

When you read these notes, it will be 1954, so I trust you will all have enjoyed the festive period and I do wish you all a happy and prosperous New Year. While sympathy goes to the prosperous side—don't forget to save for Urunga at Easter!

SOUTH WESTERN ZONE

Not much news from this zone for the month. I think we are all having a breather following the 144 Mc. movement. The 2H's and 2L's, and into his new QTH, has made provision for a comfortable shack, and is talking about the space he will have for antennas—the six should be bigger and better. Don. Geoff 2BQ is concentrating on 50 Mc. and has had some DX contacts; has not been heard in Coolamon as yet, but he is the best of my converter men. Geoff's tx. Stan 2AID heard occasionally on 40 and 30 mx and is having fun re-building. Geoff 2BQ is for some time, must be the busy season Alf.

Lyn 2AQE is very busy harvesting, getting up too early, and not having time to write, have any time for Ham Radio. Stewart 2PL reports that the chaps at Griffith are getting the 144 Mc. minded, building up rx's and benches for that band; we really must keep that side of one of these days. 2AJO has gone all DX working 14 and 25 Mc. and getting a few new countries; uses a TFD on 21 Mc. I would like to wish all in the zone a very Merry Xmas and a Prosperous New Year with lots of DX.

VICTORIA

Mr. Editor has me tied in knots this month with his deadline. The crystal ball is in pawn as can tell nothing of the December meeting. 2FO has been to the State Convention—thanks Col—and I've lost my notes on the last Tx hunt. Add to all this, most of the last month has been spent planning round 588 with 2ABO (hope I'm not treading on your toes, Jim 2ABA), so I don't know much about what has been going on.

If I remember correctly the last Tx hunt resulted as follows: 1st, Bob Hall, 2nd Jack Duncan, 3rd Eric Wardle. I seem to recollect thinking in Eric's case it was beginner's luck. You probably won't finish nearer than sixth again Eric.

Come to think of it there was the Annual Dinner, but as I was not present, don't feel qualified to comment. The only chaps I've seen since the dinner are 2JJ, 2TX and 2AF. I hope they won't talk when I'm around, or if they do it's not for publication. Looks as though I'll have to leave a message to Col.

Visitors during the month included 2TV and 2TX. 2TV is on leave from Woollahra and will be coming for a visit to the 2H's and 2L's and him on the air as yet. After the laughs I got from Bill 2TX, I haven't the heart to have a shot at him. He's the brightest viz. I've seen in a long time. I no longer heard, now operating under 2WL. Reckons he'll save time in contests with a two-letter call.

2ABO was having trouble with harmonics early in the month, but haven't heard whether they have gone or not. 2ABO was having him trouble and it's partially re-built cleaned the trouble up. 2BH having a spell of hospitalisation. Hope you are soon about again Charlie.

Large print now please, and a fan-fare of trumpets. The 2H's and 2L's, and into his new QTH, has made provision for a comfortable shack, and is talking about the space he will have for antennas—the six should be bigger and better. Don. Geoff 2BQ is concentrating on 50 Mc. and has had some DX contacts; has not been heard in Coolamon as yet, but he is the best of my converter men. Geoff's tx. Stan 2AID heard occasionally on 40 and 30 mx and is having fun re-building. Geoff 2BQ is for some time, must be the busy season Alf.

In short, Tom has reached that stage in life that most of us reach sooner or later, where in a womanhood, she's one of the joys of life to starve with us forever. In Tom's case, it is the Sister who saw him through his rough spin and she has agreed that such a life would be in keeping with her own ideas. Just wait till she sees the types you associate with Tom.

All joking aside though Tom, we all offer our sincerest congratulations on your engagement. Also, what a write-up I'll give the wedding.

Wonder how long now before the old stalwart of the Mag. Committee takes the plunge—yes you.

By now you will all be resolving to spend more time in the garden, painting the house or some such thing, and I'll leave you to it and let 2PS pad out the last few pages of this month's mag.

VICTORIAN DIVISION W.L.A. 4th ANNUAL STATE CONVENTION

The Fourth Annual Convention of the Division was held at Benalla on the week-end of 28th and 29th Nov. The weather was perfect and weather conditions. All the arrangements were made by members of the North Eastern Zone and great credit goes to those boys for the excellent smooth running of the Convention.

On the Saturday visitors assembled at the Benalla Post Office and were met by Rex 3UR and Col 3WQ, who had lapel cards all made out with the call signs and members' names for identification. The dinner was officially opened by Rex 3UR, who was then elected the Mayor of Benalla. Approximately 60 sat down to a most excellent feast, comprising roast turkey and ham, followed by sweets and coffee.

The usual toasts were given, the first being to The Queen, proposed by Max Hull. The toast to the W.L.A. was also proposed by 3UR and responded to by Len Jackson. Fred 3VS ably proposed the health to the P.M.G. and this was responded to by Frank 3ZL. To the N.E. Zone, Reg 3LS proposed their health, and Rex 3UR ably responded. The visitors' toast was proposed by Col 3FO and replied to by Mr. F. Cook, M.L.A.

The Convention was officially opened by Mr. Cook, M.L.A., and in his remarks he spoke of the excellent work done by the Division for public life and the debt of gratitude that the community owe to the experiments of the pioneers of radio. The President then delivered his opening remarks and the minutes of the last Convention were read and confirmed. He then called on Jack 3UR to come forward and receive, on behalf of the N.E. Zone, the Kinross Trophy which had been awarded to them. In the agenda there were 13 items and the debates started. Things went very well, the recommendations passed and Council will implement them as soon as possible.

A presentation to the President of the Division, 3TF, was made by Ken 3KR on behalf of the Zone. It comprised a universal xmitter, complete with tubes and guaranteed to work, especially the fine tube, City of London, a bit of equipment, but can be universally used in every home. It comprised a useful family kit with a hand on the dial. Ken 3KR, in reply, thanked the Zone for their gift and said he would use the tx in contacting the Zone and felt sure that he would be able to get through at all times.

On Sunday, all assembled at 9.15 a.m. for the social side of the Convention. The first visit was an inspection of Reynolds and Co. a truly remarkable industry and well worth the visit. All the various stages of chain making were explained by the members of the Division. A visit to Latoff and Callill garment establishment. Here, the lady members of the party were fully catered for, and the process of making a dress from the material to the finished garment was fully explained by the Manager. At the conclusion of this visit, refreshments were provided by the management and were appreciated by all. The party then split up, some went to the D.C.A. Homeing Beacon, and others to the Rural Automatic Exchange—both proving very interesting to members.

The highlight was the picnic lunch at Casey's Weir. Here under the shade of gum trees were served a variety of tasty sandwiches and tea plus a few files and wogs, interspersed with Cqs from mobile equipment.

The final visit was to the S.E.C. link at Mt. Major. From the top of the link a most glorious view can be obtained. The equipment is fully automatic in operation and runs 24 hours per day all the year. The link is used between Melbourne to Macedon, to Mt. Stanley, to Kiama and Benalla, serving the north eastern part of the S.E. zone.

This concluded the Convention and members wended their way home. Charlie 3TI and a friend travelled 320 miles to be present and 288, 3DY, 3QJ and Mrs. Col 3WQ travelled 200 miles. Bill 3AKW made the trip from Lubeck by train. Keith 3HK had 6 mx mobile. Don 3ALQ, Neville 3EJ and Reg 3LAN had 40 and 80 mx gear. Len 3LN did some high pressure salesmanship with his mobile 2 mx set-up. The Convention was a wonderful success and everybody who attended had a thoroughly enjoyable week-end.

NORTH EASTERN ZONE

A large number of zone members turned up to support the excellent results of the efforts of Rex 3UR, Hugh 3AHF, Ken 3KR and Jack 3PF in their organising of the 1953 State Convention in Benalla at the end of November. It is very much regretted that limited space will not permit enumerating all the Hams we were so pleased to see, as these notes are already late by special arrangement and we expect that our issue of space is now allotted.

However we were pleased to meet Frank 3ZU there and Henry 3HP who had left those 40 ft. poles to come down with Howard 3TV who will soon be on the air with two kilowatts (think that one out!), but unfortunately we were unable to have the company of Jim 3JK; we all wish him a speedy relief from his affliction. Also missed Gordon 3XU, however Doug 3IJ was present and it is understood that he is to be helped by Chas 3ACW and Alan 3ALN in spare time interest of assisting in setting up the local Rural Fire Brigade radio. Associates Jim Harrington, Vern Wyatt and later "Scotty" seemed to take in all the proceedings with interest and Col 3WQ was in great form.

Murray 3HJ apparently would not stay home to fix that audio fault in his 6 mx rig. Alan

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3UI and Peter 3APP were locals with v.h.f. gear at the Convention and Syd 3CI was to have signals on the air from his home station to help them. Keith 3JC and Tom 3TS were there to look on, but Vic 3ABX was missed as he was away as an exhibitor. The opening session, Stan 3AGT got a mention for his enthusiasm in making a trip up to Wagga to a Convention. It is assumed that professional interests cramped the style of Alex 3AT and Les 3ALE and necessitated their staying home, but we would have much liked to have met them. Does 3BP if they had been able to make the trip.

SOUTH WESTERN ZONE

The big event—"All Band Scramble"—started after dinner. SAKB by making 22 contacts was the top scorer. The party then went back to SAGV's and a short hunt again, this time for 15 mins. A visit to the brick works proved very interesting and rather novel for a Ham radioer. Our thanks go to SAGV, SAKC, SAGE, SAKX, SAGV, and S3PR for a very good show.

Better news about members this month. We have a new member, SAGV, who has just arrived, exUTJ, now at 3CS, and Reg at Stonefield, who has just received his call—S3PR. Welcome to the zone chaps. Don't forget to welcome S2LA if he calls on you in the next three months. He is a new member working hard.

Harry is a University student.

CENTRAL WESTERN ZONE

At the time of writing, Bill 3AKW is dickening the State Convention at Benalla. Dick JERR is still not 100 per cent. I'm very sorry to hear that, but, hey, 3TR, Jim, ADP and Herb, 3NN from now on will be up to their ears in work on their farms so I guess not much will be heard of you chappies until the harvest is finalised. Well, like DX on 2 mhz, news is equally as scarce, so I'll sign by wishing you all the very best for 1954.

GEELONG AMATEUR RADIO CLUB

Three Geelong cars went to the Colac Convention on 8th Nov., 3ALP, 3AEH and 3AWZ—all with mobile equipment. The cars kept close contact with each other at all times and had several interesting contacts as well. 3AEH had a contact with Hamilton while mobile on the Colac-Geelong road, and 3AWZ worked 3AGV of Colac on 144 Mc. for a distance of about 5 miles on the return trip to Geelong. The locals were moderately successful in the hunt. 3ALP being 3rd, 3AEH 4th and 3AWZ 8th in the 10-mile event, and 3AEH was 3rd with 3ALP 5th in the 5-mile hunt.

November meeting was by far the best we have had, in attendance, for some time and it was quite pleasing to see so many of you fellows present, included among the visitors from afar were Jim 4HZ from Gympie and Joe Tunkl from VK5 land, an old friend of Ergs. Strange though he didn't know the worthy scribe from down there.

Business was pushed through and then the evening was taken up with a fine presentation of stills in colour, and ably described by Sam 4CZ, covering his tour of the British Isles, the Continent, and America during the Coronation. The whole presented with a finesse by Sam putting him in the class of an expert on travelogues. Gave me the urge to wander to far and distant places. Thanks again, Sam.

[illegible]

Bill WDW "Don't know," says Jim's brother, who has been in the business since 1980. "I don't know if it's still there." But he does know that the "push pull" game is still being played. He says that the "push pull" game is still being played. He says that the "push pull" game is still being played.

The monthly general meeting of the VKI Division was held at the clubrooms to a representative gathering of members and visitors and took the form of a "Buy and Sell" evening. The members were given the opportunity to learn about these particular evenings and can only say that they appear to be one of the most popular with the members, judging by the large numbers and the lively atmosphere, laughter, and also that they serve a useful double purpose in bringing out into the open some of the hidden talents of the members and to be demanded by the younger members and also help to swell the fund from which the various bibles and pieces of test gear are purchased from time to time. It goes without saying that the membership is growing. It goes without saying that the two auctioneers were again the terrible twins — Dougal SYB and Ross SLW — and the success of the evening was a foregone conclusion. The members' antics. All in all a good time was had by all and when it is remembered that the lights in the hall did not go out until 11.30 p.m. it is a credit to the members.

ways found that the Radio Amateur always seemed to have come out of the same mould. Although the language and customs might appear very different on the surface, underneath a Ham was a Ham and he had only to produce his QSL card to be immediately accepted as one of the gang.

UPPER MURRAY AREAS

The Upper Murray function to entertain the wives and families was held on 10th Nov. and a good time was had by all. Tom STL was the guest of honor and gave a most interesting presentation to take part in the evening's entertainment, however Hurtle SRE said, "Don't ask me how much I enjoyed it, because I didn't produce the necessary response and the results were indeed gratifying. Murray SCF delivered a very moving speech about the work of the SMA organised about five minutes of children's games (the big children seemed to enjoy this) and Harry SKW conducted a 'give-away' show without washing machines, Lux or Persil. The prizes included a chocolate frog, at least one chocolate frog, together with some other prizes which were not competitors. Hurtle SRE entertained the guests with jokes, riddles and also a short picture show, Alec SXO made allusions to the 'rising generation,' and as someone who was home in bed, the parents did the honours. Mrs. SRE sang a song at home, and Tom STL raised his voice in song to the accompaniment of the band led by Mrs. SCF who also provided the musical entertainment. The distribution of the refreshments was in the hands of the wife of Hughie SRC, assisted by Associate member Violet.

Fred SMA has installed a new half wave antenna for 3.5 Mc. and fed, but as Fred has been seen lately on the business end of a rotator, he is cultivating his holding, he does not get the chance to try it out, although he makes a valiant attempt to get the "New" New England together. Hughie SDC has not been heard on the air for some time but he has been busy building gear for 144 Mc. and his projected beam element array is more advanced than just thinking. Harry SKW has been away in the city and he has not been here but returned home for the November function at the general meeting. He did not see you at the general meeting. OM.

Murray SCF still has his gear in various stages of "dismantlement" which is a welcome change from saying that he has not been heard this month. Hurtle SRE has been dabbling in the water a little, but has been getting his share of the spoils. The band has been on the band opens up. Tom STL has appeared regularly on 3.5 Mc, and is still to be heard on the air each Thursday evening for the edification of the Morse code learners at 7 p.m. He has also been heard on 14 Mc, and is scheduled to appear on 14 Mc. At odd times. He tells me that he had a contact with Scott (IAF) the other day and Scott told him that his brother-in-law Rob SRE, ex-1RG, had gone to Sydney to get married. He also told me that he hears from Mac Hurtle Island these days, so he is still alive.

The President of the Woomeera Radio Club, Len 50C-50B, will be making a tour of the Upper Murray district over the Xmas period and his trip will include Walkerie, Renmark, Mildura, Bircchip, Ouyen, thence to Pinnaroo, Wellington and then Adelaide. Save up the surplus fruit boys, and let him have it as he passes, he will be very appreciative, but don't let it hit him too hard. Presidents are made

“Fragile material, Ahem!!” Frank returned from his trip to VK3 looking well and fit, very grateful for the many courtesies extended to him on the journey. He told me that he was surprised at the number of Hams who wanted to know what sort of a joker the scribe for VK3 really was. “I was a bit of a Ballerina even when I was a kid,” he thought that he sounded as far as to say this. He thought that he was an “old dild.” Frank, ever loyal to his Division, quickly answered, “Pansy is by no means old!!” Thanks Frank, that’s telling them. Wait a minute, something looks not quite right here. I think that I have been taken for a ride!!

Charlie, then, SON, came on their third week and his fourth contact was with Scott and I. He was a little more of a talker, but I proved an inspiration to all and every member who may at some time or other become discouraged with their A.O.C.P. attempts. He was a little more of a talker, but I proved an inspiration to all and every member who may at some time or other become discouraged with their A.O.C.P. attempts. He was a little more of a talker, but I proved an inspiration to all and every member who may at some time or other become discouraged with their A.O.C.P. attempts.

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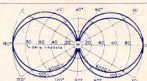
The 416 Double Ribbon Velocity Microphone



Left: Cat. 416 Double Ribbon Microphone.

Above: Polar diagram response curve of Cat. 416.

Below: Characteristic response graph of Cat. 416.



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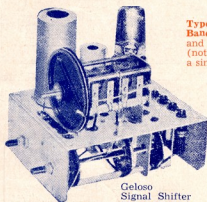
The characteristic response of the 416 Microphone is 30—13,000 cycles (see graph at left). The polar diagram response curve is shown at the left.

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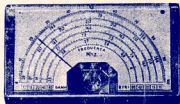
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Signal Shifter
Type M4/101

- Instant change of frequency on any band by coil switching.
- Controllable output over entire tuning range.
- Single control full band spread on each band.
- Capacitive output.
- Utmost frequency stability (± 200 c.p.s. on all bands).
- No plug-in coils required.
- Laboratory tested.
- Power supply required: 400 volts at 32-54 Ma.

DIAL FOR GELOSCO V.F.O. UNIT



CRYSTAL MICROPHONES

Type M/400 Piezo-electric Microphone: A very attractive chrome plated "ball" type Microphone of small physical size, complete with three yards of twin shielded low-loss cable. Thoroughly shielded. **List Price:** £5/19/11.

Type T30: Hand Microphone in well proportioned brown bakelite case. Unit stands on table without need for any stand. Uses UN10 fully screened insert. Complete with 4 ft. of twin screened low-loss cable. **List Price:** £5/12/-.



CRYSTAL INSERTS

Type M409: Frequency response 40—7,000 cycles. Extremely robust and mechanically strong. Can withstand falls and knocks. No further casing is required as unit is complete as a Microphone of attractive appearance. **List Price:** 32/11.

Type M410: Same unit as M409, but with extra screening to exclude R.F. pick up. **List Price:** 38/6.

Type UN10: A complete insert for incorporation in a cage in the manufacture of complete Microphones. Used in Microphones employed with Gelosco Wire Recorders. **List Price:** 30/7.

AVAILABLE THROUGH ALL DISTRIBUTORS

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